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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/788,938	02/27/2004	George Rauscher	21140.001	9207

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EXAMINER

SUHOL, DMITRY

ART UNIT PAPER NUMBER

3725

DATE MAILED: 03/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/788,938	RAUSCHER ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Dmitry Suhol	3725	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 28 December 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

The indicated allowability of claims 1-17 is withdrawn in view of the newly discovered reference(s) to Allyne '476, Panyard et al ' 230 and Squires '053 or Lynall '270. Rejections based on the newly cited reference(s) follow.

#### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Allyne '476 in view of Panyard et al ' 230 and Squires '053 or Lynall '270. Allyne teaches that it is known to construct a cylinder liner (5) having a flange portion (5a) from a variety of metals through any known techniques (page 4, col. 1, lines 38-56). The limitations of claim 2 are shown in figures 1 and 4.

Panyard is relied upon to teach that it is known to construct a cylinder liner from a carbon alloy steel (col. 3, lines 18-20) since a steel liner has a marked increase in stiffness over a conventional iron liner resulting in improved performance characteristics (col. 4, lines 28-30).

Squires and Lynall both teach that it is known to construct a metallic cylindrical member having flanges through the step of cold forging in a press (see figures 1-2 of Lynall and figures 1-6 of Squires).

Therefore it would have been obvious to one having ordinary skill in the art at the time of the claimed invention to have manufactured the cylinder liner of Allyne from a carbon alloy steel material for the purpose of improved performance characteristics. It would have been further obvious to manufacture the flange portion of Allyne through cold forging steps in a hydraulic press for the purpose of quick and cost effective manufacture, especially since Allyne clearly states that his cylinder liner may be manufactured by any known methods.

Regarding claims 3-6 and the carbon content of the steel and the internal diameter of the cylinder liner, it would have been obvious to utilize carbon steel with carbon amount in the claimed ranges and to manufacture the cylinder liner with the claimed inner diameter, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233. Furthermore, the cylinder diameter would only depend on dimensions of the cylinder block which is to receive it.

Claims 7-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Allyne '476, Panyard et al ' 230 and Squires '053 or Lynall '270, as stated above, and further in view of Usui '621. Allyne, as modified by Panyard and Squires '053 or Lynall,

discloses most of the claimed elements but for closely fitting a forming mandrel within the internal diameter as required by claim 7 and finish machining the forged cylinder liner blank to form a cylinder liner as required by claims 7 and 14. However, the use of a mandrel during the formation of the flange portion is taught by Squires (elements 6, 15 and 24) while the step of finish machining the liner blank to form a cylinder liner is taught by Usui (col. 2, lines 42-47). Therefore it would have been obvious to include the use of a forming mandrel in the manufacture of the cylinder liner of Allyne for the purpose of ensuring that the sidewall portions of the cylinder are not deformed in an unwanted manner. It would have been further obvious to include a finish machining step in the production of the cylinder liner of Allyne for the purpose of providing a finished cylinder liner with superior qualities.

Regarding claims 9-11 and 15-17 and the carbon content of the steel (steel type) and the internal diameter of the cylinder liner, it would have been obvious to utilize carbon steel with carbon amount in the claimed ranges and to manufacture the cylinder liner with the claimed inner diameter, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233. Additionally, the material used is considered a design choice in that applicants clearly state that a variety of starting materials could be used in the manufacture of the cylinder liner (applicants specification page 10, line 25). Furthermore, the cylinder diameter would only depend on dimensions of the cylinder block which is to receive it.

Regarding claim 12, applying 500 to 1000 tons of force to the press dies to form the flange portion would have been obvious since it would only depend on the materials used and final dimensions of the desired product and since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Regarding claim 13, Squires teaches that the application of heat to the end portion of a metal tube member to forge flange ends is known (page 1, lines 6-11) while the specific step of induction heating and temperature of about 1200 degrees F would have been obvious since the examiner that official notice that such steps are well known in the metal working arts and the temperature would only depend on the desired workability of the metal work piece during deformation. Furthermore, such a step is considered a design choice in that applicants state that the process does not require the heating step as claimed (applicants specification page 11, lines 5-6).

### ***Response to Arguments***

Applicant's arguments with respect to claims 1-17 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dmitry Suhol whose telephone number is 571-272-4430. The examiner can normally be reached on Mon - Friday 8:30am-5:00pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Derris Banks can be reached on (571) 272-4419. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Dmitry Suhol  
Primary Examiner  
Art Unit 3725

ds